The Real Role of Facial Response in the Experience of Emotion: A Reply to Tourangeau and Ellsworth, and Others

James D. Laird
Clark University

The facial feedback hypothesis holds that emotional experiences are derived from facial expressions. Ten published studies indicating that manipulated facial expressions do produce corresponding emotional experience are contrasted with Tourangeau and Ellsworth's sole published failure to demonstrate this relation. Six other studies using a different but theoretically consistent paradigm also demonstrate facial feedback effects. Related results in many of these 16 studies effectively rule out experimental demand as an explanation and instead suggest similarities in process between facial feedback and hunger, attitude change and self-evaluation.

Recently Tourangeau and Ellsworth (1979) failed in an attempt to show that subjects induced to adopt facial expressions of emotion, would then report feeling those emotions. The authors believed that they were testing a hypothesis related to, though not directly contained in the emotion theories of Tomkins (1962) and Izard (1977), namely, that the experience of emotion is derived from feedback from facial expressions. Tourangeau and Ellsworth (1979) concluded from their study that the "facial feedback" hypothesis was not tenable and that this cast some doubt on the larger theories as well. Subsequently, Tomkins (1981) and Izard (1981) both wrote replies to that article, in large measure disowning this empirical form of the facial feedback hypothesis on grounds that feeling required more than such simple facial movements. Hager and Ekman (1981), in the same issue, argue on methodological grounds that the experimental hypothesis would not be expected to be confirmed. Ellsworth and Tourangeau (1981) then found themselves defending their attack on "this authorless hypothesis" (p. 363) and their "failure to disconfirm what nobody ever said" (p. 363).

The reader of the Tourangeau and Ellsworth article and the subsequent series of replies

might easily infer that the weight of the evidence is against the facial feedback hypothesis and that no one expected otherwise. Both inferences are false.

Evidence for Facial Feedback

The studies relevant to the facial feedback hypothesis have all used one of two general methods. In one type, of which Tourangeau and Ellsworth's study is a good example, facial expressions are manipulated more or less muscle by muscle. For example, a subject might be asked to contract muscles between the eyebrows and at the corners of the jaw, to produce an angry expression. Tourangeau and Ellsworth's is the only published study which failed to show an effect of the muscle by muscle procedure on emotional experience. Izard (1981) also mentions an unsuccessful unpublished study by Kotsch, Izard, and Walker. Ranged against these two are quite a number of successful published demonstrations of the effect in our lab (Duncan & Laird, 1977, 1980; Edelman, 1984; Kellerman & Laird, 1982; Laird, 1974; Laird & Crosby, 1974; Laird, Wagener, Halal, & Szegda, 1982) and by others (Kleinke & Walton, 1982; MacArthur, Solomon, & Jaffee, 1980; Rhodewalt & Comer, 1979). In this type of study, the box score favors the facial feedback hypothesis, 10 to 1 on published articles, and probably by the same margin among unpublished articles.

Requests for reprints should be sent to James D. Laird, Department of Psychology, Clark University, Worcester, Massachusetts 01610.

The second type of study gives subjects an occasion for an emotional reaction, such as an electric shock or viewing a film. The subjects are asked to exaggerate or minimize their expressive reactions, usually to deceive a purported observer. These studies characteristically have demonstrated effects of varying the magnitude of expressive behavior on both self-reports of emotional experience and on various measures of physiological arousal such as heart rate and skin conductance (Colby et al, 1977; Kleck, et al. 1976; Kopel & Arkowitz, 1974; Kraut, 1982; Lanzetta, Cartwright-Smith, & Kleck, 1976; Zuckerman, Klorman, Larrance, & Spiegel, 1981). Only one study in the exaggerate/minimize paradigm reported negative results (McCaul, Holmes, & Solomon, 1982).

Overall, then, the box scores favor the facial feedback hypothesis by 10 to 1 in the muscle by muscle paradigm and 6 to 1 in the exaggerate/minimize paradigm. Furthermore, successful demonstrations of an effect must weigh more heavily in such an argument, because there are only a few ways in which one can succeed but many in which to fail. This box score approach does not get us very far, however. The important question is, what differentiates the studies that support the facial feedback hypothesis from those that do not? To answer this, we need to consider each experimental paradigm separately.

In the muscle by muscle paradigm the basic technique for manipulating expression is always similar. Subjects are given some plausible excuse, most often electromyographic recording and then are asked to contract and relax different muscles that in fact are chosen to create the expression of an emotion.

The most obvious difference between Tourangeau and Ellsworth's procedures and those of all of the other studies is whether the comparisons were within or between subjects. Tourangeau and Ellsworth deliberately chose to run subjects in only one expression condition in order to minimize the likelihood that subjects would become aware of the experimenter's hypotheses. Obviously if subjects are first asked to adopt a smile and then a frown, they are more likely to guess the real intent of the study. In experiments with a within-subjects design, positive results could

be created by experimenter demand (see also Buck, 1980, for a discussion of this problem). In short, a possible explanation of the discrepancy between Tourangeau and Ellsworth and the other studies is that the positive results were all due to artifact.

This issue has been a concern of previous experimenters, and at least three general features of these studies were designed to cope with this possibility. First, all employ elaborate deceptions to misdirect subjects about the experimenter's intent. A second response to this problem (Laird, 1974) was to run a parallel "observer" subject who sat beside the manipulated subject and could see and hear everything the experimenter said and did during the experiment. These observer subjects showed no variations in emotional experience between smile and frown conditions, suggesting that the effects were not due to the experimenter's behavior. However, these observer subjects did not have available to them the information that the manipulated subjects might have had from their own faces, that the facial manipulations produced smile and frown expressions. Thus, the possibility that the manipulated subjects were simply complying with perceived expectations is reduced but not eliminated. The third procedure used in this and all subsequent studies was an extensive postexperimental questionnaire. These questionnaires asked a series of questions about the procedures, the subjects' understanding of the purpose of the experiment or any other purpose they could imagine, what they thought the experimenter expected them to do, and what factors in the experiment may have affected their mood. Any subjects who revealed awareness of the hypotheses were excluded from subsequent analyses.

These three procedures for dealing with the awareness problem have made crude awareness and experimental demand unlikely, but do not rule out more subtle effects. Of course, at this level of subtlety the same kind of demand effects might also have occurred in the Tourangeau and Ellsworth study (cf. Hager & Ekman, 1981). Running subjects in only one condition reduces, but does not entirely remove the possibility of awareness and/or experimenter bias.

Fortunately, a number of the more recent

studies provide an indirect but much more compelling argument against the possibility of subject awareness and experimenter demand. These studies developed from an empirical observation and some theoretical assumptions which will be discussed in greater detail later. The empirical observation was that although the overall effects of expressions were significant, not all subjects responded in an equally strong manner (Laird, 1974). Following up on this observation we ran a study in which subjects were run through the expression manipulation procedure twice at an interval of a few days. We found that people consistently did or did not respond to the expression manipulation on both occasions (Laird & Crosby, 1974). These differences in expression response were also related in theoretically consistent ways to how subjects described their emotional experience in everyday life. In short, it appeared that the facial feedback effect was not equally strong in all people.

The theory that guided this work was self-perception theory (Bem, 1967; 1972). In this view, we are in the same position as any observer of us, who must infer our psychic states from observation of our actions and the circumstances in which we act. Like the observer, we can only know something about ourselves by observing what we do and say. For example Bem (1967) argued that we infer our attitudes from our speeches and self-descriptions of attitudes. From the perspective of self-perception theory the relation between facial expressions and emotional experience is a particular case of the general relation between behaviors and psychic states.

Putting together the obervation that some people responded to their expressions and some did not, with the theoretical assumption that this was an instance of a general process, we were lead to propose that there were general differences between people in the kinds of information they used in identifying their own attributes (Laird & Berglas, 1975). There seem to be two such varieties of information. One kind, which we labeled self-produced cues, arise from our actions, such as expressive behaviors, bodily activities in arousal, and instrumental action. The other kind of cues, situational cues, consist of normative information from the situation,

about what anyone in the situation should or probably would feel.

In his work on the eating of normal weight and obese people, Schachter (1971) has drawn a similar distinction, between external and internal cues. Among external cues for eating he would include the time of day, the appearance, and the taste of food, whereas internal cues would consist of stomach contractions. Schachter's labels seem quite straightforward and useful in the context of the eating research, but less so in regard to other self-perceptions. The problem is that the external/internal labels imply that the distinction is essentially geographical— whether the cues arise inside or outside of the individual's skin. In the case of a smile, for example, it is difficult to say whether it is inside or outside the skin, and the attempt to make such a distinction seems even more inappropriate in regard to a counterattitudinal speech. The point is that the distinction is not really between inside and outside. Instead, one kind of cue arises from a person's particular activities, whereas the other consists of general expectations about how most people would behave in a situation, which require no attention to the individual. This latter way of characterizing the distinction seemed better captured by the labels of self-produced or situational. The issue however, is not the nature of the distinction, but simply how that distinction is to be described. What Schachter would call external cues, we would call situational, and his internal would be our self-produced.

If indeed we were talking about the same kinds of cues, then clearly response to expression manipulations should be related to body weight. This is indeed the case. In four studies, it has been found that normal weight people who presumedly eat in response to self-produced cues also feel the emotions they are induced to express. In contrast overweight people who are unresponsive to self-produced cues for eating are similarly unresponsive to self-produced cues from their expressions (Comer, 1975; Comer & Rhodewalt, 1979; Edelman, 1984; MacArthur, et al. 1980).

A number of other studies have examined the relation between the expression manipulation procedure and other self-perception procedures. For example, Bem (1967) origi-

nally proposed self-perception theory as an explanation of the effect of counter-attitudinal behavior and our analysis suggested that there should be individual differences in these effects (Laird & Berglas, 1975). Such differences in the self-perception of attitudes should be related to the effects of expression on feeling, and they are. People whose emotional experience was affected by the expression manipulations also changed their attitudes in the induced-compliance paradigm, whereas subjects who did not respond to the expression manipulation also did not respond to the induced-compliance procedure (Duncan & Laird, 1977; Rhodewalt & Comer, 1979). In another study a reverse of this effect occurred. Subjects who do not respond to the self-produced cues of the expression manipulation do respond to the situational cues of a conformity manipulation (Comer, 1975). Similarly, subjects who respond to a placebo in the standard, positive way, do not feel the emotions they are induced to express. Subjects who are more responsive to self-produced cues instead show a reverse placebo effect in which they feel the opposite of the placebo message (Duncan & Laird, 1980). Another study demonstrated that mood produced by expression manipulations affected recall of emotional material, but only among subjects more responsive to self-produced cues (Laird, Wagener, Halal, & Szegda, 1982). Appearance changes also affected the self-perceptions of subjects who responded to the expression manipulation, but did not affect the others (Kellerman & Laird, 1982). Finally, subjects who show the facial feedback effect also tend to be field independent, as measured by the Rod and Frame Test (Rhodewalt & Comer, 1979; Edelman, 1984).

All of these relations between facial feedback and other tasks or measures cannot be explained by experimenter bias. In all of these studies the experimenter was completely unaware of the subjects' performance on the other tasks or tests, so he or she could not have known which subjects to bias in the appropriate way. Similarly, in most cases the subjects could not have identified their own performance on one task or test, so they could not have known whether or not they should respond on another. Thus, the experimenter bias/cooperative subjects explanations will not suffice.

This pattern of relations also renders unlikely the possibility that subjects who respond to the expression manipulation procedure are simply the more suggestible or complaint. For example, much evidence indicates that field dependent people are more susceptible to suggestion (e.g., Witkin, et al. 1954), but field dependent subjects do not respond to the expression manipulation procedure. Instead it is the less suggestible field independent subjects who do (Rhodewalt & Comer, 1979; Edelman, 1984). Similarly, obese individuals have been found to be more conforming (Rodin & Slochower, 1974) but they do not respond to the expression manipulation procedure, instead their normal weight cohorts do. In addition, subjects who respond to the expression manipulations do not accept the suggestion of a placebo message (Duncan & Laird, 1980). Finally, in a recent study subjects who were unaffected by the expression manipulation accepted a direct suggestion about how they should judge themselves, whereas subjects who did respond to the expression manipulation responded opposite to the suggestion (Kellerman & Laird, 1982). In sum, there is a clear, consistent pattern in which one group of subjects are responsive to self-produced cues, including those arising from their manipulated facial expressions. These subjects do not respond to suggestion, conformity and other situational definitions of how they should feel. Another group do not respond to the expression manipulations, and these subjects are very responsive to suggestion.

At this point it seems reasonable to rule out methodological explanations of the studies that show that facial feedback affects emotional experience. Instead, it seems necessary to find a methodological explanation of the one study which did not find such an effect. However, before we go on, one qualification that has slipped rather casually into this discussion should be highlighted. The evidence seems consistent and strong that the facial feedback effect occurs. It is equally clear that it occurs only among some people, not all. Tourangeau and Ellsworth may have been half wrong, but they were also half right.

If the facial feedback effect occurs, and is not due to experimental demand, then why did Tourangeau and Ellsworth fail to detect

it? A strong possibility is that individual differences in the effects of expressions on emotional experience may be the cause. If Tourangeau and Ellsworth's sample contained a relatively high proportion of subjects who were more responsive to situational cues, then the effects among subjects more responsive to self-produced cues might have been obscured in the aggregate. Of course, there is no way to know if this did occur, but this possibility seems more plausible in the light of a study showing that some kinds of subject-recruitment procedures do differentially attract subjects responsive to self-produced or situational cues (Wagener & Laird, 1980).

An equally likely possibility arises from Tourangeau and Ellsworth's choice of a between-subjects design. They chose this design in the reasonable attempt to reduce subject awareness, but they also accepted some serious limitations with its advantages. In particular, we have consistently found that subjects arrive at experimental sessions in widely different moods and/or use the mood scales in different ways. These differences tend to endure through the session for many subjects, especially those more responsive to situational cues, and expression manipulations often modify existing moods without entirely overriding them. All the differences between how subjects feel when they arrive and how they react to the experimental situation will appear as error variance in a between-subject design.

In addition to the possible effects of subject differences and the error variance introduced with the between-subjects design, a number of possible problems with Tourangeau and Ellsworth's method were suggested by Izard, Tomkins, Hager, and Ekman. However, most of these features of their method were shared with some of the successful studies, so it seems unlikely that they were at fault. For example, Hager and Ekman were concerned that there was not very tight control of the facial muscle manipulations, but their procedure was at least as good as most of the other studies. Similarly, Hager and Ekman noted that Tourangeau and Ellsworth asked their subjects to maintain the expressions for 2 min, whereas in most of the other studies 10 to 15 s was the norm. However, in three recent studies we have asked subjects to maintain expressions for longer lengths of time, up to about 3 minutes, and have still

found the usual effect (Laird, et al. 1982; Wagener & Laird, 1980; Wixon & Laird, 1981). Thus, within this range the amount of time does not seem to be a critical variable either.

Another difference between the Tourangeau and Ellsworth study and many others in which expressions were directly created by the experimenter is in the kinds of expressions used. Most of the published positive studies have used expressions of happiness and anger, whereas Tourangeau and Ellsworth used fear and sadness. However, MacArthur, Solomon and Jaffee (1980) used a sad expression successfully. In addition, in two recent studies (Laird, et al. 1982; Wagener & Laird, 1980) we have used fearful and sad expressions successfully in conceptually related experiments. Thus, the nature of the expressions used does not seem likely to be the origin of the different results.

In sum, then, it is apparent that there is a great deal of evidence from the muscle by muscle paradigm in support of the facial feedback hypothesis. This evidence cannot readily be explained except by the assumption that, at least for some people, expressions of emotion lead to feelings of that emotion. Tourangeau and Ellsworth's results are anomalies in this pattern, and seem attributable to purely methodological differences.

In addition to these studies, which shape expressions muscle by muscle, there is the body of work by Lanzetta, Kleck, and their colleagues, and Zuckerman et al. (1981). These studies employed a different methodology that is not susceptible to the problems of how well or how long subjects' expressions are formed. In these studies, subjects are lead to believe that there are people observing them as they receive electric shocks or watch emotionally evocative films, and the subjects' task is to mislead the observers about the intensity of the stimulus. Thus, in these studies the subjects are minimizing or exaggerating their own expressive behavior in whatever ways they find natural. These variations in expressed feeling are then reflected in subjects' reports of their real pain, disgust, or amusement. Tourangeau and Ellsworth were aware of some of these studies and therefore reasonably restricted their negative conclusions: "Lanzetta, Cartwright-Smith, and Kleck's (1976) finding of an effect of facial expression

on feelings of pain does not seem to extend to feelings of fear or sadness" (Tourangeau & Ellsworth, p. 528). They do not offer any explanation for this discrepancy.

In the only failure to find facial feedback in this paradigm, McCaul et al. (1982) concluded that mimicking emotional expressions could produce arousal variations without any effects on experienced affect. They report two studies, but one of these apparently did not employ any measure of emotional experience, and so is irrelevant to this conclusion. Their other study did have a measure of experience, but this measure was deployed in a considerably less powerful way than their measures of physiological response. The physiological measures were compared between conditions in which subjects posed feeling "afraid, calm, or normal," so that all comparisons were within subjects. The measures of experience on the other hand were based only on the first trial for each subject, with the comparison being between subjects who were assigned different orders of expression conditions. Thus, the negative results appeared in only one of their two studies, and only in a between-subjects comparison that was less powerful than any of the others. In the more powerful comparisons within subjects, their results replicate the observation that mimicking facial expressions can produce changes in heart rate. However, their article provided only weak evidence that expressions do not affect experience. In any case, the bulk of the data from this paradigm still clearly favors the facial feedback hypothesis.

Conclusions

In both of the two paradigms used to study facial feedback the situation is the same at the moment. In both there are a number of studies demonstrating that independently manipulated facial expressions do affect emotional experience, whereas the contrary evidence is meager and probably attributable to differences in method. The facial feedback effect has been demonstrated with a wide variety of emotions, including anger, happiness, sadness, fear, pain, and humor, with various cover stories and procedures for producing expressions, and with various durations of expression. In sum, contrary to Tourangeau and Ellsworth and others, the facial feedback effect has been demonstrated frequently and consistently.

The evidence is equally strong that this effect is not due to experimental demand or the compliance of subjects. Those subjects who are most affected by manipulations of their facial expressions are those who seem least susceptible to demand and suggestion, because they are field independent, normal weight, do not accept placebo instructions, nor do they respond to direct experimenter suggestions about how they should feel. Experimenters could not be producing differential effects because in all of these studies they are blind to the subjects' performances on both the expression manipulations and other tasks. In short, at least some people are happy because they smile, are angry because they scowl and are sad because they pout.

Just as some people are affected by facial feedback, others are not. Unaffected subjects appear, instead, to define their emotional states in terms of situational expectations. This interpretation is less certain than the first two however, because much of the evidence on the role of situational cues requires an additional step of inference. Most of the studies that directly demonstrate effects of situational cues have involved phenomena other than emotion. For example, we know with considerable confidence that people who don't respond to facial feedback tend to eat in response to external, or situational cues. They also accept direct suggestions about their self-concepts and abilities. These studies show a greater response to situational cues, but not for emotion. Only one study (Duncan & Laird, 1980) has actually demonstrated directly that people who don't show facial feedback do accept the emotional state implied by their circumstances. Thus, the evidence is less extensive and more inferential, but the most reasonable conclusion is that people who do not show the facial feedback effect instead base their emotional experience on situational cues.

It is at least possible that the facial feedback effect is real but is no more than a curiosity of the experimental lab, like some perceptual illusion that can only occur in the contrived circumstances of the laboratory. Naturally it is difficult for an experiment to bear directly on the issues of external validity. However, a

number of the relations discussed in this article do connect facial feedback to the real world. All of these connections relate to the individual differences in response to self-produced and situational cues. First of all, people who respond to self-produced cues describe their everyday emotional experiences differently from those who do not (Laird & Crosby, 1974). In addition, all of the evidence connecting cue response to body weight takes us outside of the laboratory, to the places and times when people eat. The studies connecting cue response to field dependence themselves remain within the laboratory, but because field dependence is related to a variety of real-life events, these studies add at least a small increment of confidence to this connection. Overall however, the evidence for this connection to the real world is not as strong as for the earlier propositions. Nonetheless, it seems reasonable at this point to assume that we are indeed studying the processes by which people feel emotions in their everyday lives.

How large is the role of facial feedback in emotional experience? The studies reviewed here do not provide a very clear answer. Within the confines of the experiments themselves, the effects of expressions on mood can be estimated by omega square (Hays & Winkler, 1971, p. 728), and range from .12 to .17 (Laird, 1974) to .44 (Duncan & Laird, 1980). This last value is quite impressive, because it indicates that 44% of the variance has been accounted for by the expression manipulations. However, this is variance in experimental contexts carefully designed to minimize any other sources of variance. Thus, these values derived from controlled experiments tell us nothing about the relative importance of facial expressions in everyday life.

In fact, self-perception theory suggests that although facial expressions might be among the most important determinants of emotional experience, there are certainly others. For example, the importance of situational cues has already been discussed. In addition, any other behaviors that permit an observer to infer an individual's mood might also serve the individual as well. Thus, it seems likely that patterns of movement, posture, expressive language and overt actions would also contribute to the individual's experience.

Nonetheless, considering the importance of facial expressions in judgments of other people's moods, it certainly seems likely that facial expression is also one of the most important determinants of one's own feelings.

There is one body of research that suggests how important expressive behavior may be. This is the research demonstrating the effectiveness of psychotherapeutic techniques such as systematic desensitization (e.g., Kazdin & Wilson, 1978). These therapies seek to inhibit the experience of negative emotions by controlling their expression. Specifically, the therapist teaches the client to relax all of their muscles and to keep them relaxed during the remainder of the therapeutic procedures. The relaxed muscles then prevent the individual from feeling anxiety, guilt, and so forth. No doubt a number of mechanisms could be proposed for this effect, but surely the most straightforward mechanism is discussed here—that in order to feel an emotion at least some people must first enact its expression.

Throughout this article I have used the language of self-perception to discuss the facial feedback effect. However, the facial feedback hypothesis more frequently has been derived from the emotion theories of Izard and Tomkins (as for example by Tourangeau & Ellsworth) and clearly the results might have been described in those terms as well. In fact, both differential emotions theory (Izard, 1977; Tomkins, 1962) and self-perception theory can account equally well for the basic facial feedback effect. Although both Izard and Tomkins were dubious about the kinds of manipulations that produce facial feedback, their doubts were essentially methodological, and their theories are consistent with these results. Indeed, these results support an important part of their theories that had not previously received direct empirical confirmation.

Izard and Tomkins do not explicitly discuss individual differences of the kind described here, but their theories contain elements which could account effortlessly for individual differences too. For example, both have discussed the obvious fact that facial expressions can occur without appropriate feeling, and the explanations they propose might be expanded to represent stable differences between

people, as well as between occasions. I noted earlier that the evidence is persuasive, though not quite as strong, that subjects who do not show the facial feedback effect instead respond to situational cues. This finding is less obviously compatible with the theories of Izard and Tomkins, but I am confident it can be incorporated as well. The final group of results that must be accommodated by differential emotions theory demonstrates connections between how people feel emotions and how they feel hunger, attitudes, self-evaluations, and abilities. This is the point at which self-perception theory and the theories of Izard and Tomkins most differ. I don't think, however, that this is a competitive difference, where one must be right and the other wrong. Instead, the two theoretical positions seem to deal primarily with quite different phenomena, and overlap only in regard to the origins of the subjective experience of emotion, where they are in essential agreement.

For example, relatively little is known about the details of the facial feedback process, but most of what is known or assumed is the same for both self-perception theory and differential emotions theory. Both assume that the process partly depends on sensory information from the facial muscles or skin. Izard and Tomkins have been more elaborate in their speculations about the neural pathways and the central nervous system structures involved, but none of these speculations is incompatible with a self-perception perspective. Both perspectives also assume that the information from facial feedback must be integrated and combined, so that the actual emotional experience represents a pattern of facial muscle activity and other inputs, including such cognitive factors as the occasion for the expressive activity. (The recognition of this integrative aspect of the process is the reason for the "perception" part of the self-perception label.) Both perspectives also assume that this integrative process is automatic, very rapid, and that people are unaware of either the process or the constituent elements of the final integrated experience. I have in the past (Laird, 1974; Kellerman & Laird, 1982) suggested that this process seems to be very similar to the process of depth perception in its automatic, rapid, integrative, and inaccessible qualities, and this parallel

seems consistent with Izard's and Tomkin's views as well.

The two theories differ in how they develop from this set of shared assumptions. Izard, for example, explicitly notes that the facial feedback issue concerns how emotions are initially activated, and distinguishes

between (the facial feedback) activation of emotion and other aspects of emotional processes. Propositions relating to the latter and to emotion-consciousness-cognition-action relationships are the real heart of differential emotions theory. The latter propositions are the essential proving grounds for differential emotions theory . . " (Izard, 1981, p. 351).

The issue of facial feedback and subjective experience is not the central concern of his theory. He is primarily interested in the effects of emotional processes on later thoughts and actions. On the other hand, subjective experience is the central concern of self-perception theory, which in fact deals with nothing else but experience. However, self-perception theory is concerned about emotional experience as one among a variety of kinds of self-experience and self-knowledge. In sum, then, differential emotions theory and self-perception theory essentially agree about the basic nature of facial feedback, and only differ in the kinds of phenomena they attempt to relate to facial feedback.

Whatever minor theoretical differences may remain or emerge in future research, self-perception and differential emotions theory agree on the major point of this review: Contrary to Tourangeau and Ellsworth, facial feedback does occur, and in fact is a major component of normal emotional processes.

References

Bem, D. J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review, 74,* 183–200.

Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.) *Advances in experimental social psychology* (Vol. 6, pp.). New York: Academic Press.

Buck, R. (1980). Nonverbal behavior and the theory of emotion: The facial feedback hypothesis. *Journal of Personality and Social Psychology, 38,* 811–824.

Colby, C. Z., Lanzetta, J. T., & Kleck, R. E. (1977) Effects of expressions of pain on autonomic and pain tolerance responses to subject-controlled pain. *Psychophysiology, 14,* 537–540.

Comer, R. (1975). Individual differences in self-attribution behaviors: Dimensions and child-rearing correlates. Ph.D. Dissertation, Clark University.

Comer, R., & Rhodewalt, F. (1979). Cue utilization in the self-attribution of emotions and attitudes. *Personality & Social Psychology Bulletin, 5,* 320–324.

Duncan, J. W., & Laird, J. D. (1977). Cross-modality consistencies in individual differences in self-attribution. *Journal of Personality, 45,* 191–206.

Duncan, J. W., & Laird, J. D. (1980). Positive and reverse placebo effects as a function of differences in cues used in self-perception. *Journal of Personality and Social Psychology, 39,* 1024–1036.

Edelman, B. (1984). A multiple-factor of body weight control. *Journal of General Psychology, 110,* 99–114.

Ellsworth, P. C., & Tourangeau, R. (1981). On our failure to disconfirm what nobody ever said. *Journal of Personality and Social Psychology, 40,* 363–369.

Hager, J. C., & Ekman, P. (1981). Methodological problems in Tourangeau and Ellsworth's study of facial expression and experience of emotion. *Journal of Personality and Social Psychology, 40,* 358–362.

Hays, W. L., & Winkler, R. L. (1971). *Statistics. Probability, inference and decision.* New York: Holt, Rinehart & Winston.

Izard, C. E. (1977). *Human emotions.* New York & London: Plenum Press.

Izard, C. E. (1981). Differential emotions theory and the facial feedback hypothesis of emotion activation: Comments on Tourangeau and Ellsworth's "The role of facial response in the experience of emotion." *Journal of Personality and Social Psychology, 40,* 2, 350–354.

Kazdin, A. E., & Wilson, G. T. (1978). *Evaluation of behavior therapy: Issues, evidence and research strategies* Cambridge, MA: Ballinger.

Kellerman, J., & Laird, J. D. (1982). The effect of appearance on self-perception. *Journal of Personality, 50,* 296–315.

Kleck, R. E., Vaughan, R. C., Cartwright-Smith, J., Vaughan, K. B., Colby, C. Z., & Lanzetta, J. T. (1976). Effects of being observed on expressive, subjective, and physiological responses to painful stimuli. *Journal of Personality and Social Psychology, 34,* 1211–1218.

Kleinke, C. L., & Walton, J. H. (1982). Influence of reinforced smiling on affective responses in an interview. *Journal of Personality and Social Psychology, 42,* 3, 557–565.

Kopel, S., & Arkowitz, H. S. (1974). Role playing as a source of self-observation and behavior change. *Journal of Personality and Social Psychology, 29,* 677–686.

Kraut, R. E. (1982). Social pressure, facial feedback, and emotion. *Journal of Personality and Social Psychology, 42,* 853–863.

Laird, J. D. (1974). Self-attribution of emotion: The effects of expressive behavior on the quality of emotional experience. *Journal of Personality and Social Psychology,* 475–486.

Laird, J. D., & Berglas, S. (1975). Individual differences in the effects of engaging in counter-attitudinal behavior. *Journal of Personality, 43,* 286–304.

Laird, J. D., & Crosby, M. (1974). Individual differences in the self-attribution of emotion. In H. London & R. Nisbett (Eds.) *Thinking and feeling. The cognitive alteration of feeling states* (pp.). Chicago: Aldine.

Laird, J. D., Wagener, J. J., Halal, M., & Szegda, M. (1982). Remembering what you feel: The effects of emotion on memory. *Journal of Personality and Social Psychology, 42,* 4, 646–657.

Lanzetta, J. T., Cartwright-Smith, J., & Kleck, R. E. (1976). Effects of nonverbal dissimilation on emotional experience and autonomic arousal. *Journal of Personality and Social Psychology, 33,* 354–370.

McArthur, L. A., Solomon, M. R., & Jaffee, R. H. (1980). Weight and sex differences in emotional responsiveness to proprioceptive and pictoral stimuli. *Journal of Personality and Social Psychology, 39,* 308–319.

McCaul, K. D., Holmes, D. S., & Solomon, S. (1982). Voluntary expressive changes and emotion. *Journal of Personality and Social Psychology, 42,* 145–152.

Rhodewalt, F. & Comer, R. (1979). Induced-compliance attitude change: Once more with feeling. *Journal of Experimental Social Psychology, 15,* 35–47.

Rodin, J., & Slochower, J. (1974). Fat chance for a favor: Obese-normal differences in compliance and incidental learning. *Journal of Personality and Social Psychology, 29,* 557–565.

Schachter, S. (1971). Some extraordinary facts about obese humans and rats. *American Psychologist, 26,* 129–144.

Tomkins, S. S. (1962). *Affect, imagery, consciousness.* New York: Springer.

Tomkins, S. S. (1981). The role of facial response in the experience of emotion: A reply to Tourangeau and Ellsworth. *Journal of Personality and Social Psychology, 40,* 355–357.

Tourangeau, R., & Ellsworth, P. C. (1979). The role of facial response in the experience of emotion. *Journal of Personality and Social Psychology, 37,* 1519–1531.

Wagener, J. J., & Laird, J. D. (1980). A "new look" at judgments about emotion in others: The effects of the emotional experience of the judge. Paper presented at EPA. Eastern Psychological Association.

Wagener, J. J. & Laird, J. D. (1980). The experimenters foot-in-the-door: Self-perception, body weight and volunteering. *Personality and Social Psychology Bulletin, 6,* 441–446.

Witkin, H. A., Lewis, H. D., Herteman, M., Machover, K., Meissner, P. B., & Wapner, S. (1954). *Personality through perception* New York: Harper.

Wixon, D. R., & Laird, J. D. (1981). Effects of mimicry on the judgment of facial expressions in others. Paper presented at the Annual Meeting of the Eastern Psychological Association.

Zuckerman, M., Klorman, R., Larrance, D. T. & Spiegel, N. H. (1981). Facial, autonomic, and subjective components of emotion: The facial feedback hypothesis versus the externalizer-internalizer distinction. *Journal of Personality and Social Psychology, 41,* 929–944.